New trends in managemen
Of
Acute Aortic Dissection

An essay
Submitted for partial fulfillment of the master degree in
General surgery

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2016

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AAD	Acute Aortic Dissection
ACS	Acute Coronary Syndrome
AMI	Acute Myocardial Infarction
BAV	Bicuspid Aortic Valve
CHF	Congestive Heart Failure
CRP	C – reactive protein
CT	Computed Tomography
DAS	Data Acquisition System
DHCA	Deep Hypothermic Circulatory Arrest
EDS	Ehlers Danlos Syndrome
ELISA	Enzyme Linked Immunosorbant Assay
FBN 1	Fibrillin-1 protein
ICU	Intensive Care Unit
IMH	Intramural Haematoma
IRAD	International Registry of Acute Dissection
IVUS	Intravascular Ultrasound
MDCT	Multi-detector Computed Tomography
MDCTA	Multi-detector Computed Tomography Angiography
MFS	Marfan Syndrome
MPR	Multi-planar Reformatted

MRI	Magnetic Resonance Imaging
ROI	Region Of Interest
SD	Standard Deviation
SVC	Superior Vena Cava
TAV	Tricuspid Aortic Valve
TEE	Transoesophageal echocardiography
TTE	Transthoracic echocardiography

Introduction

INTRODUCTION

In 1760, Dr Nicholls, physician to King George II, first described on necropsy an acute aortic dissection. Over the course of more than 200 years, we have developed a growing awareness and understanding of acute and chronic aortic syndromes. Recent advances in imaging and therapeutic techniques have further emphasized the importance of early diagnosis of acute aortic syndromes, which continues to be crucial to survival. However, we continue to be uncomfortable in the diagnosis and management of this highly lethal disorder **(Thomas et al., 2005).**

Aortic dissection develops from a tear within the intima of the aortic wall, blood flows across this entry point into a weakened media splitting the medial layer along the direction of flow creating a new (false) channel within the aortic media. This new channel progresses downstream, and significant pressure/mechanical stress is exerted by the advancing column of blood on the aortic branches encountered in its path **(Alberto and Joseph, 2007).**

The true prevalence of aortic dissection is difficult to estimate. The incidence of aortic dissection is estimated to be 5-30 cases per 1 million people per year. Aortic dissection occurs once per 10,000 patients admitted to the hospital**(Gale, 2008)** .

There are many risk conditions for aortic dissection; the most common predisposing factor in IRAD (International Registry of Acute Aortic Dissection) was hypertension (72%), a history of atherosclerosis was present in 31% of patients and a history of cardiac surgery in 18%. **(Thomas et al., 2005).**

The DeBakey classification comprises 3 types of aortic dissection (I, II, and III); the Stanford classification, 2 types (A and B). Within the DeBakey system, type I denotes a dissection that involves the full span of the aorta; type II, a dissection from the aortic root through the level of the origin of the innominate artery; and type III, a dissection from the descending aorta (distal to the origin of the left subclavian artery) to the aortic bifurcation. Dissections in the Stanford classification are categorized based on the involvement of the ascending aorta (type A) or the lack of such involvement (type B). **(Vijay et al., 2009).**

The challenge in managing acute aortic dissection is appropriate clinical suspicion and action in pursuing the diagnosis and therapy **(Nesser et al., 2002).**

Initial medical management has been the consensus for the treatment of acute type B aortic dissection unless associated with life-threatening complications **(Anthony et al., 2006).**

The primary objective in management is to normalize blood pressure and initiate anti-impulse medication thus reducing the force of

left ventricular ejection (dP/dt), which are the main determinants of extension and rupture of the false lumen. Acute ascending aortic dissections (Stanford type A or De Bakey type I or II) should be treated as a surgical emergency because these patients are at high risk of life-threatening complications such as aortic rupture, stroke, visceral ischemia, cardiac tamponade, and circulatory failure. In the current era, endovascular interventions for acute descending (type B) aortic dissection is the primary approach in the setting of complications of acute distal dissection because surgical repair has no proven superiority over medical or interventional treatment in this scenario. Medical treatment focuses on invasive hemodynamic monitoring, β-blockade, andvasodilators.**(HusseinandChristoph,2007).**